

50.56 Gy). Median prescribed dose to the supraclavicular area was 42.56. 13 patients were treated with Step and shot and 3, with VMAT.

Conclusions. Longer follow up will provide data on late toxicity and tumour recurrence in our serie; and likewise, further clinical study remains important to thoroughly define the appropriate clinical setting and patient selection criteria for IMRT in breast cancer.

<http://dx.doi.org/10.1016/j.rpor.2013.03.098>

Inclined plane vs chest immobilizer radiotherapy breast treatment

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Introduction. The goal of radiation therapy is to decrease toxicity and achieve higher tumor control by increasing the dose and lowering its margins. Thanks to the new technologies and locking systems we are getting closer to this goal.

Objective. To demonstrate the dose difference received by the organs at risk near the volume in a patient with breast tumor depending on whether it is treated with the Inclined Plane Immobilizer or Thorax Immobilizer.

Methodology. We conducted a series of CT scan simulations in patients with the Inclined Plane Immobilizer and the Thorax Immobilizer in order to demonstrate the existing differences in treatment planning. The doctor painted the volumes on both CT scans and the physics service made the relevant calculations on both treatment plannings in order to measure the differences.

Conclusions. We have observed significant differences in terms of the amount of dose reaching the organs at risk near the volume depending on the immobilization system used.

<http://dx.doi.org/10.1016/j.rpor.2013.03.099>

Intensity modulated radiotherapy treatment (IMRT) in bilateral breast

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Introduction. IMRT with simultaneous or sequential integrated boost (SIB) is feasible in the treatment of bilateral breast cancer. This technique can spare organs at risk and is able to give a homogeneous dose distribution in breast volume and surgical bed (Boost).

Method. Between 2009 and 2012, 6 patients with bilateral breast cancer, 3 received IMRT + SIB, 1 IMRT sequential boost with electron beam and 2 were treated with three-dimensional radiotherapy. The prescribed dose in integrated boost was 62.5 Gy, breast and supraclavicular fossa (SCF) 50 Gy in 25 sessions and 30 sessions in sequential boost. The studied homogeneity index (HI) was defined as: (D5% – D95%)/breast mean dose. Also was calculated conformity index (CI): V95%/VPTV (both volumes in cm³, total breast and boost volumes).

Results. 4 patients: TNM variable: TIS T3 N0–N2, no predominant tumor location. Three patients were treated by conserving surgery + sentinel lymph node biopsy or lymphadenectomy and one suffered modified radical mastectomy. All patients received adjuvant chemotherapy and hormone treatment. Dosimetric data (range): chest wall volume: 185–215 cm³, breast V: 117–2168 cm³, Boost V: 60–430 cm³, SCF V: 234–579 cm³. D107: 0–6.95 Gy, Mean Dose 50: 53 Gy (50.3–56.8 Gy), Mean Dose 60: 60.1 Gy, Mean Dose 62.5: 62.7 Gy (62.5–63.13 Gy). V95: 92.2–97.1%, D5: 52.67–64.4 Gy, D95: 48–59.4 Gy. CI = 0.08–0.15, HI: 0.75–0.95. Organs at risk: left lung volume: 890–1110 cm³, left V20 = 23.9% (17–28.3), left lung mean dose: 15.52 Gy (11.2–18.6), Right lung volume: 1162–1296 cm³, right V20 17.75 (17.9–26.9). 11.2–18.6 Gy, right lung mean dose: 15.52 Gy (11.9–18.6). Heart volume: 334–590 cm³, V25: 0.7%, heart mean dose: 9.3 Gy (4.2–18.7). Left coronary artery (LCA) volume: 2.7–4.9 cm³, LCA mean dose: 7.9 Gy (5.3–15.7), mean LCA maximal dose: 10.31 Gy (6.9–17.9).

Conclusion. IMRT in bilateral breast cancer is preferred for individual medical situations. The calculate of homogeneity and conformity index is very important in treatment quality and it must be evaluated for each patient.

<http://dx.doi.org/10.1016/j.rpor.2013.03.100>

Internal mammary chain and breast irradiation: IMRT vs. 3DRT treatment

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Objective. The objective is to compare two techniques for the treatment planning of an internal mammary chain and left breast mastectomy and axillary and supraclavicular lymph nodes irradiation with two techniques: 3DRT alone (1), versus a combination of IMRT for mastectomy and internal mammary chain and 3DRT for lymph nodes (2).